FIG.1

CPU   RAM   ROM

TIMER   A/D   D/A

ECU

30

40

ECU

10

10a

12

22

12o

24

162

132

15

134

164

16

16o

130

140

142

150

146

136

23

25

130r

27

144

149a

32

149b

148

149c

θ ac

34

FIG. 2

FIG. 3

(I) 4-CYCLE SPARK IGNITION MODE IN LOW LOAD

IVO
(BTDC5°)

TDC

EG
(BTDC20°)

EVC
(ATDC5°)

IV

EV

IVC
(ABDC60°)

EVO
(BBDC40°)

BDC

FIG.4

(IV) 4-CYCLE SPARK IGNITION MODE IN HIGH LOAD

IVO
(BTDC5°)

TDC

EG
(BTDC20°)

EVC
(ATDC5°)

IV

IVC
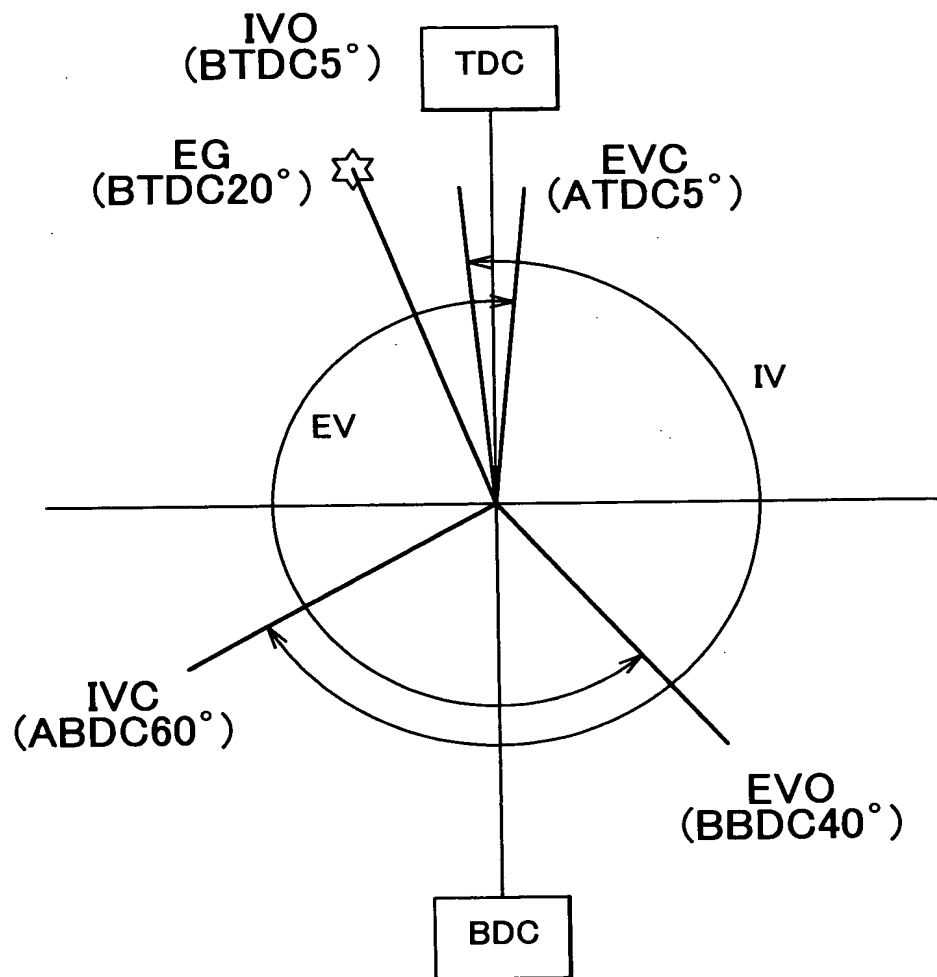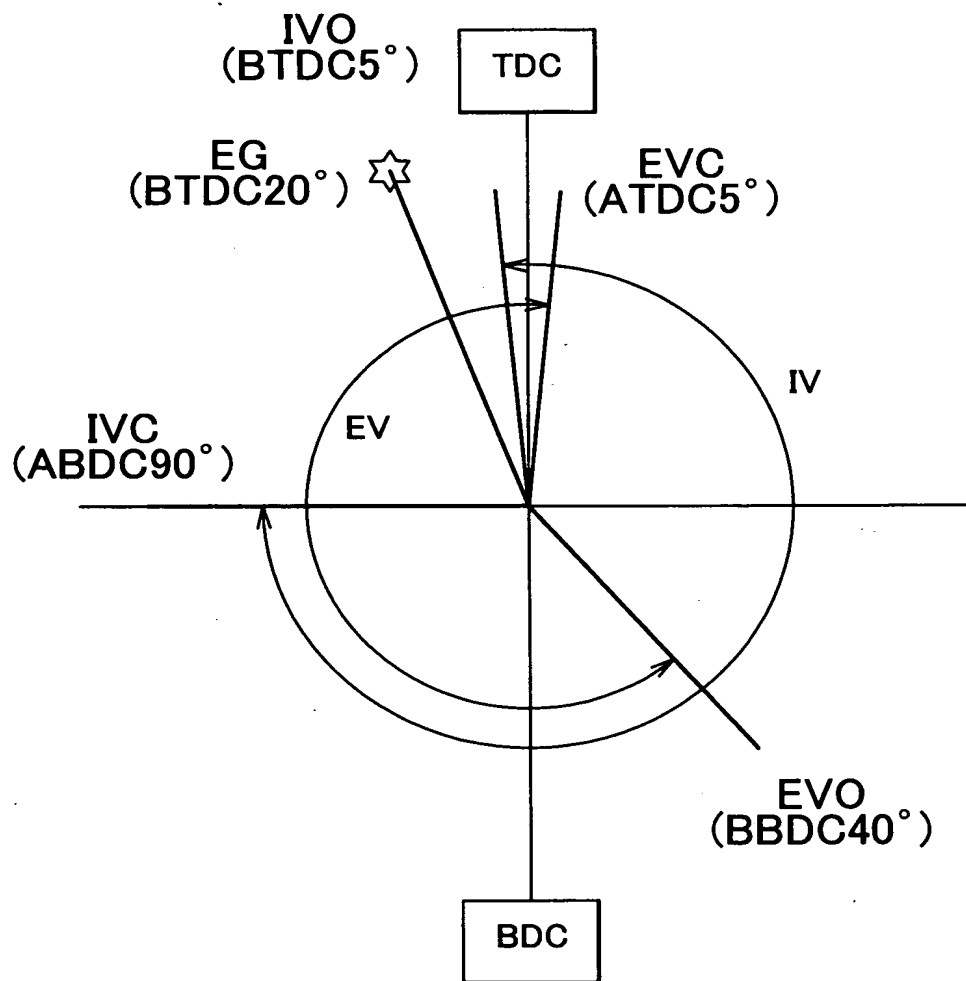(ABDC90°)

EV

EVO
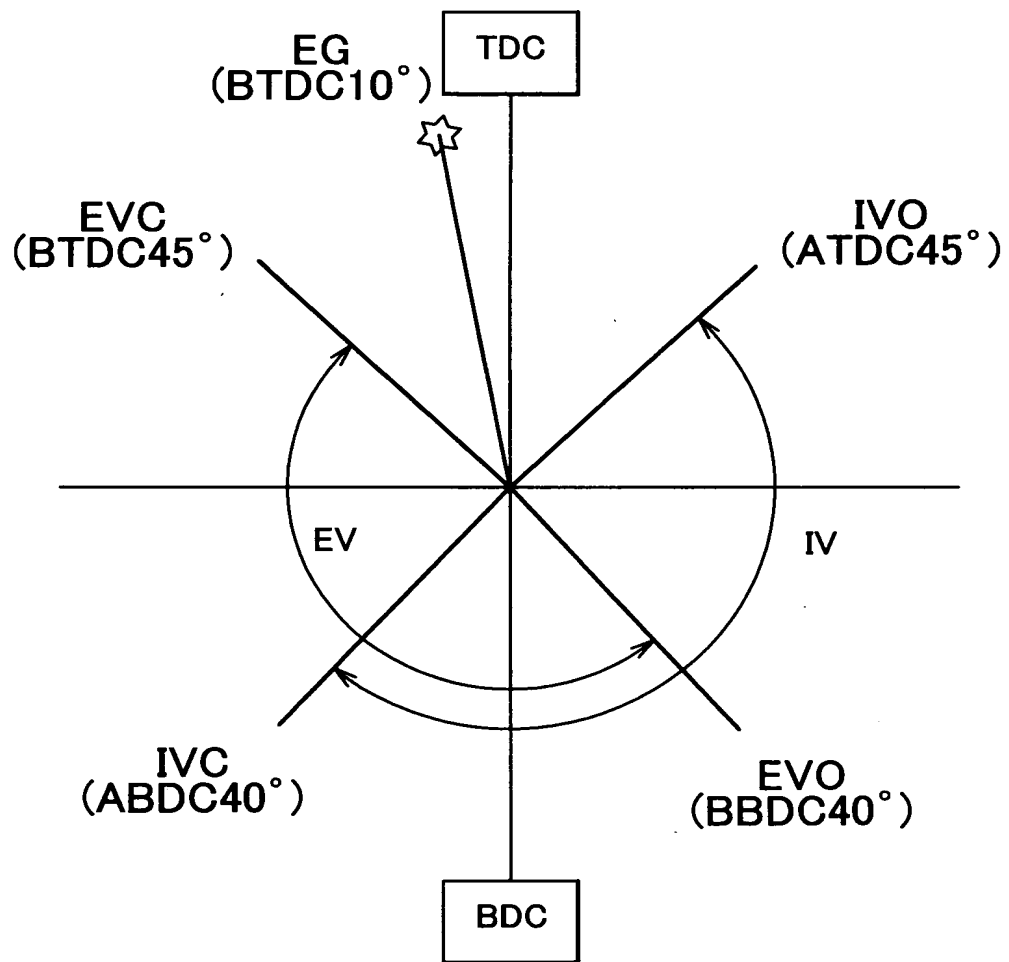(BBDC40°)

BDC

FIG.5

(Ⅲ) 4-CYCLE SELF IGNITION MODE
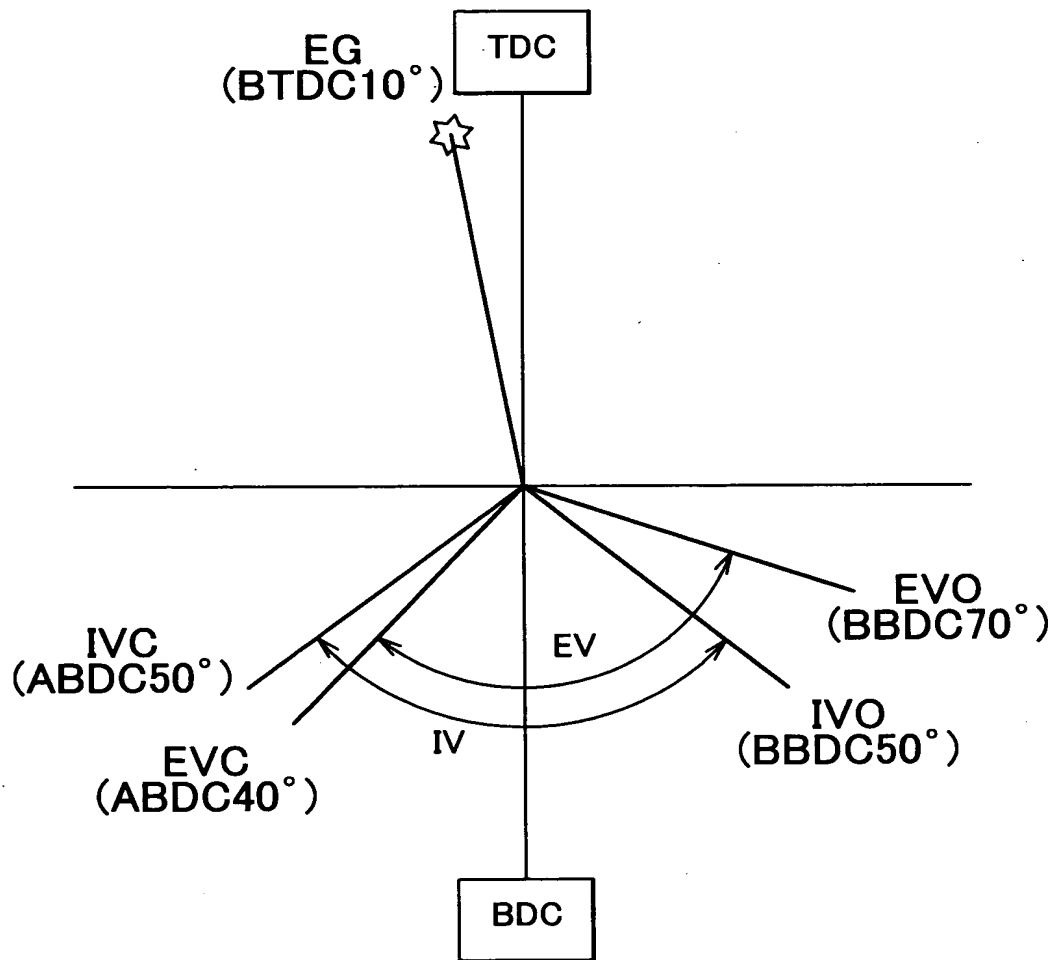
FIG.6

(II) 2-CYCLE SELF IGNITION MODE

FIG.7

(T1) 4-CYCLE SPARK IGNITION MODE IN HIGH LOAD →
    2-CYCLE SELF IGNITION MODE
(T1L) 4-CYCLE SPARK IGNITION MODE IN LOW LOAD →
    2-CYCLE SELF IGNITION MODE
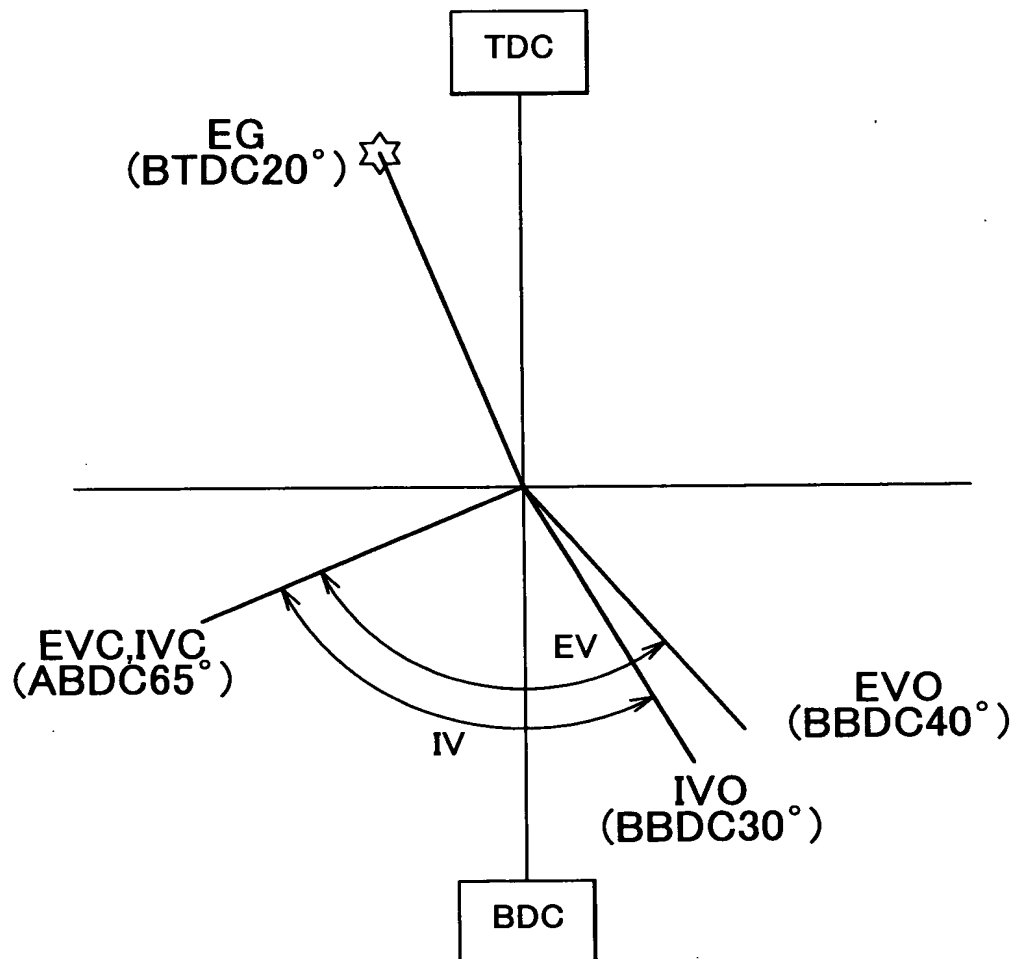(T4) 4-CYCLE SELF IGNITION MODE →
    2-CYCLE SELF IGNITION MODE

FIG.8

(T2) 2-CYCLE SELF IGNITION MODE →
4-CYCLE SPARK IGNITION MODE IN HIGH LOAD

(T2L) 2-CYCLE SELF IGNITION MODE →
4-CYCLE SPARK IGNITION MODE IN LOW LOAD

F I G . 9

(T3)2-CYCLE SELF IGNITION MODE →
4-CYCLE SELF IGNITION MODE

TDC

EG
(BTDC20°)

EVC
(BTDC55°)

IVO
(ATDC55°)

IV

EV

EVO
(BBDC70°)

IVC
(ABDC30°)

BDC

FIG. 10

(T5) 4-CYCLE SPARK IGNITION MODE IN HIGH LOAD →
4-CYCLE SELF IGNITION MODE
(T5L) 4-CYCLE SPARK IGNITION MODE IN LOW LOAD →
4-CYCLE SELF IGNITION MODE

FIG.11

(T6) 4-CYCLE SELF IGNITION MODE →
    4-CYCLE SPARK IGNITION MODE IN HIGH LOAD
(T6L) 4-CYCLE SELF IGNITION MODE →
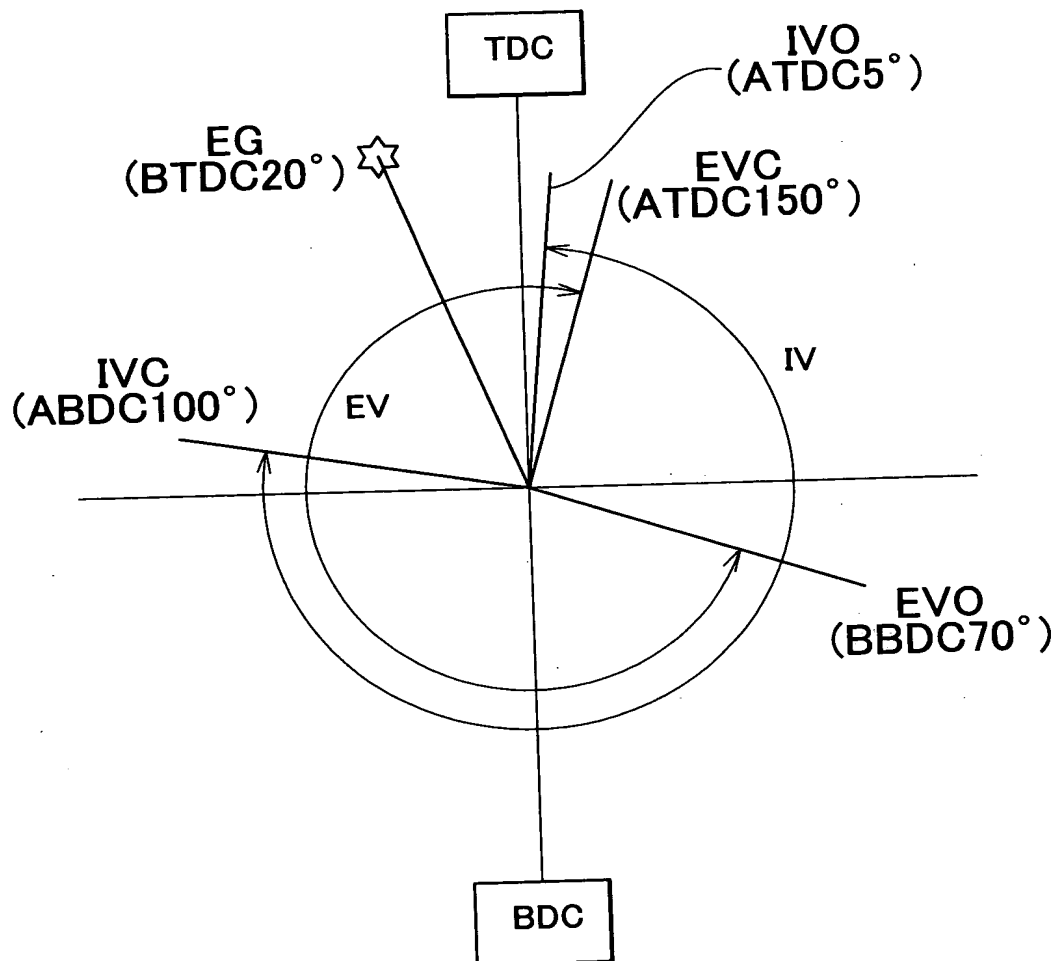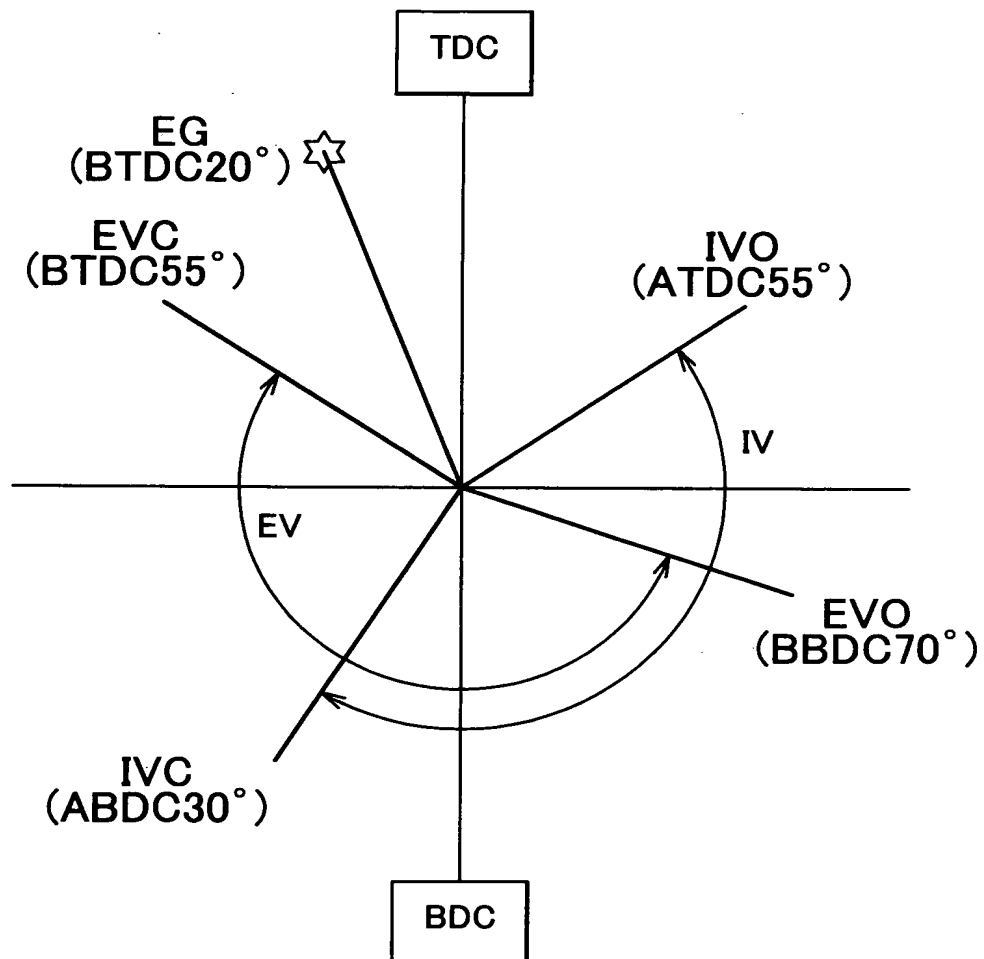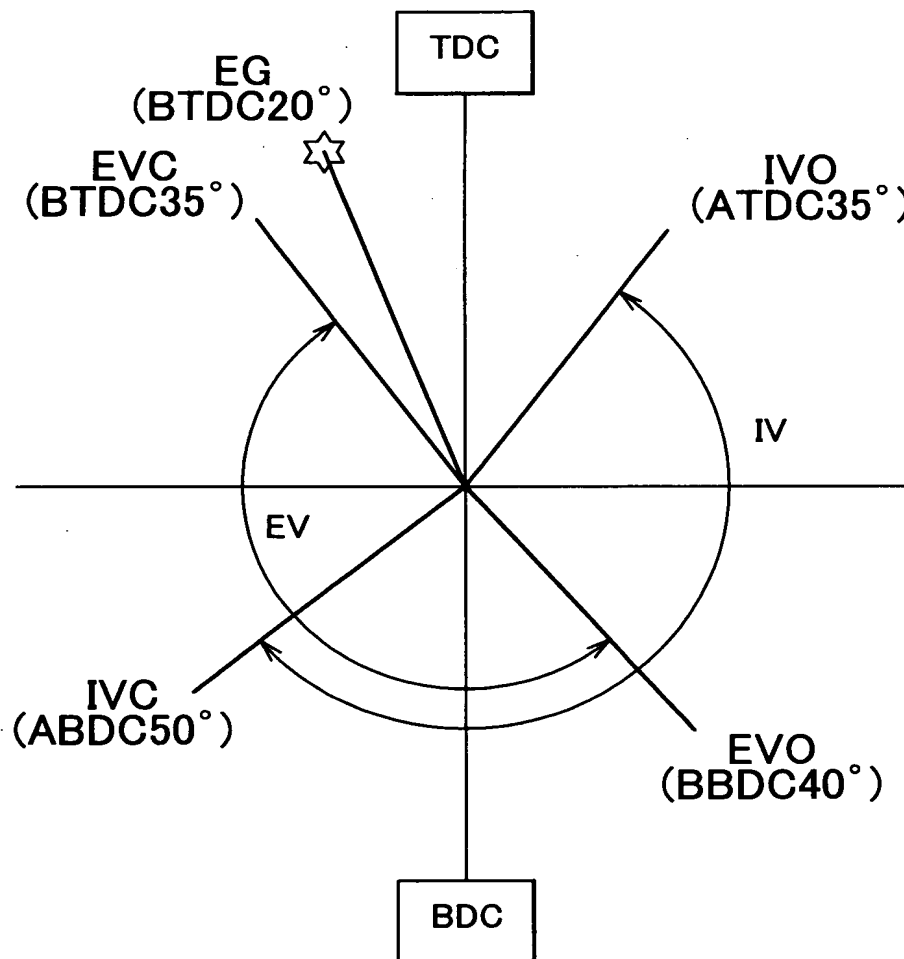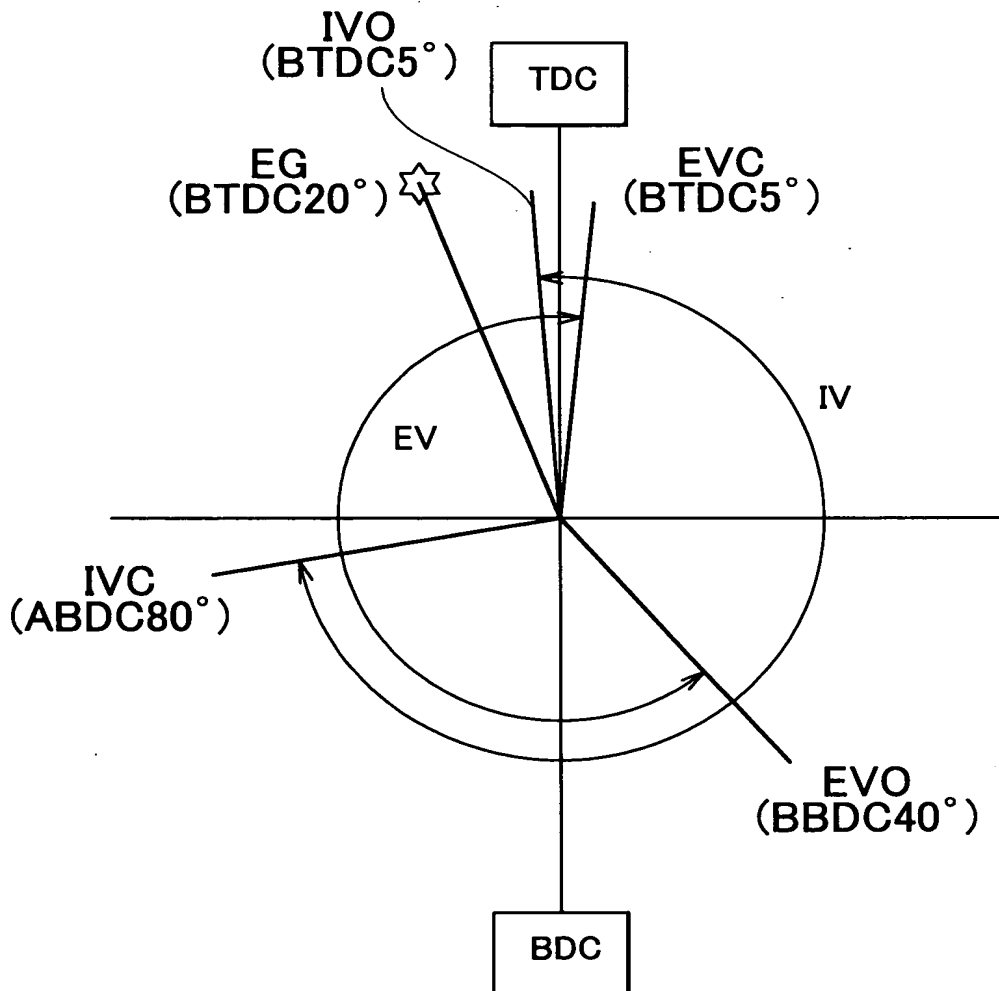   4-CYCLE SPARK IGNITION MODE IN LOW LOAD

FIG. 12

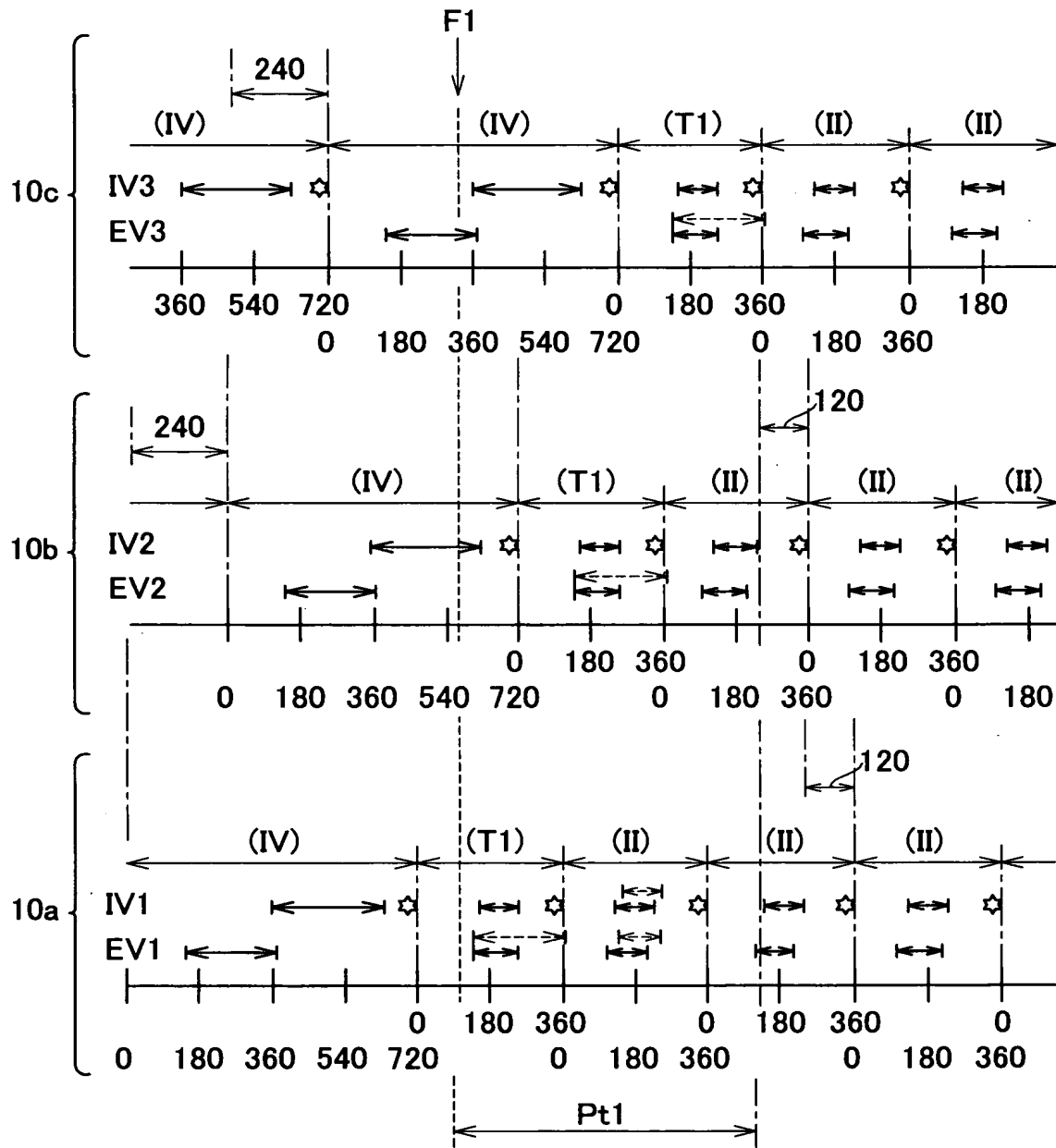## 4-CYCLE SPARK IGNITION MODE IN HIGH LOAD → 2-CYCLE SELF IGNITION MODE

FIG.13

START

CC = N
CA = 0 —— S2

SELECT CYLINDER UNIT
WITH EXHAUST VALVE
TO BE NEXT OPENED —— S4

CC = N
? —— S6
YES

NO

MODE
ALREADY
SWITCHED
? —— S8
YES

NO

MODE
SWITCH REQUEST
DETERMINED
? —— S10

T2,T3
(2C→4C)

T1,T4,~T6
(4C→4C,
4C→2C)

CA ≧(720° /N)
? —— S12
NO

YES

MODE SWITCH
CA = 0 —— S14

CC = CC − 1 —— S16
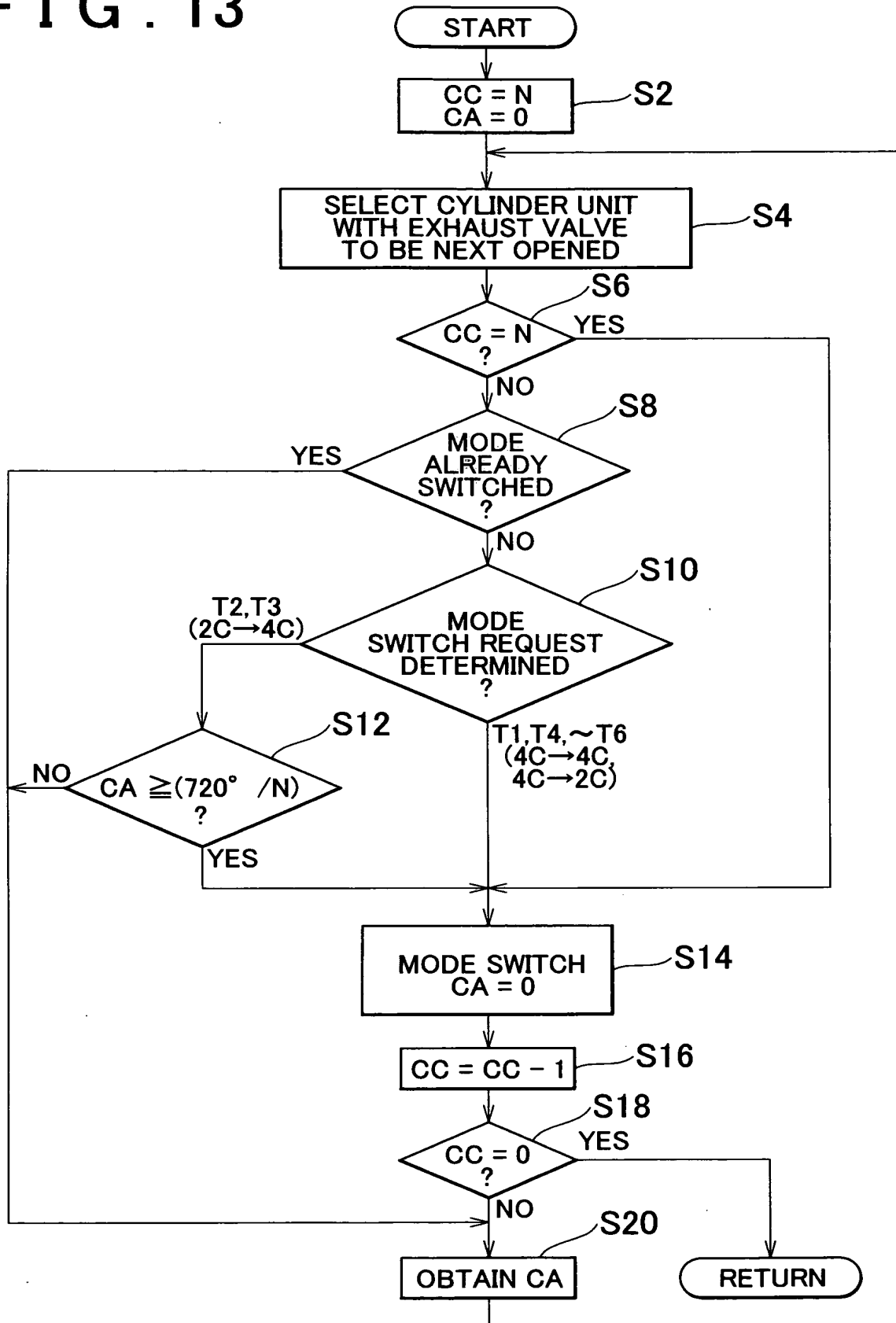
CC = 0
? —— S18
YES

NO

OBTAIN CA —— S20

RETURN

FIG.14

2-CYCLE SELF IGNITION MODE
→ 4-CYCLE SPARK IGNITION MODE IN HIGH LOAD